



Violet Red Bile Glucose Agar, VRBGA

| AS-1376

VRBG or VRBD is used for detecting and enumerating *Enterobacteriaceae* in food and dairy products.

Violet Red Bile Glucose (VRBG) Agar is a selective and differential culture medium which is used to count and isolate *Enterobacteriaceae*. It is a variation of MacConkey Agar in which lactose is replaced with glucose.

The medium contains differential and selective agents. Gram-positive bacteria cannot grow in the presence of bile salts and crystal violet because they are selective agents. The only carbohydrate source is glucose, which allows for differentiation according on fermentation ability. Yeast extract and peptone provide vital nutrients for the growth of microorganisms.

Because *Enterobacteriaceae* ferment glucose quickly, they produce acid that reacts with neutral red, a pH indicator, to form red colonies that are frequently encircled by a reddish-purple precipitate of bile salts. Because lactose is not present in VRBG agar, it is not possible to distinguish between *coliforms* that ferment lactose and those that do not, which makes it appropriate for counting *Enterobacteriaceae* rather than individual *coliform* groups.

The microbiological evaluation of food, pharmaceutical, and cosmetic products frequently uses VRBG agar.

Composition (gr/L)

Peptone from Meat	7
Yeast Extract	3
Glucose	10
Bile Salts	1.5
Sodium Chloride	5
Neutral Red	0.03
Crystal Violet	0.002
Agar	13
Final pH at 25°C	7.3 ± 0.2

Preparation

Dissolve 39.5 g of the powder into 1 liter distilled water. Heat with agitation to boil for 1 minutes to completely dissolve the powder. DO NOT AUTOCLAVE.

Quality Control

Dehydrated Appearance: Pink-beige to pink, free-flowing, homogeneous (may contain small dark particles).

Prepared Appearance: Reddish-purple, slightly opalescent.

Reaction of 3.95% Solution at 25°C: pH 7.3 ± 0.2

Microbial Test Results

Incubate at 35 ± 2 °C for 18 to 24 hours.



Organism (ATCC)	Recovery	Colony Color
<i>Escherichia coli</i> (25922)	Good	Red to purple colonies, with bile precipitate
<i>Salmonella typhimurium</i> (14028)	Growth	Red to purple colonies, with bile precipitate
<i>Staphylococcus aureus</i> (25923)	None to poor	Colorless to red colonies, no bile precipitate

Storage

Keep the container at 15-30 °C and prepared medium at 2-8 °C.